Hazard ID	Situational Analysis							Hazard Identification						Hazardous Event Classification						Determination of ASIL and Safety Goals	
	Operational Mode	Operational Scenario	Environmental Details	Situation Details	Other Details (optional)	Item Usage (function)	Situation Description	Function	Deviation	Deviation Details	Hazardous Event (resulting effect)	Event Details	Hazardous Event Description	Exposure (of situation)	Rationale (for exposure)	Severity (of potential harm)	Rationale (for severity)	Controllability (of hazardous event)	Rationale (for controllability)	ASIL Determination	Safety Goal
HA-001	OM03 - Normal driving	OS04 - Highway	EN06 - Rain (slippery road)	SD02 - High speed	N / A	IU01 - Correctly used	**Normal driving** on a **highway** during **rain (slippery road)** with **high speed** and **correctly used** system.	Lane Departure Warning (LDW) function shall apply an oscillating steering torque to provide the driver with haptic feedback.	DV04 - Actor effect is too much	The lane departure warning function applies an oscillating torque with very high torque (above limit).	EV00 - Collision with other vehicle	High haptic feedback can affect driver's ability to steer as intended. The driver could lose control of the vehicle and collide with another vehicle or with road infrastructure.	Loss of of control (steering) with possible collision.	E3 - Medium probability	The driver is driving on a highway with wet road. This will happen quite often, so we will label the exposure with E3.	S3 - Life-threatening or fatal injuries	The driver is traveling at high speed -> severity will be high.	C3 - Difficult to control or uncontrollable	The malfunction was that the lane departure warning function causes the steering wheel to vibrate excessively with wild swings of the steering wheel, most drivers would have difficulty controlling the vehicle.	ASIL C	The oscillating steering torque from the lane departure warning function shall be limited.
HA-002	OM03 - Normal driving	OS03 - Country Roads	EN01 - Normal Conditions	SD02 - High speed	N / A	IU02 - Uncorrectly used	**Normal driving** on **country roads** during **normal conditions** with **high speed** and **uncorrectly used** system.	Lane Keeping Assistance (LKA) function shall apply the steering torque when active in order to stay in ego lane.	DV03 - Function always activated	The lane keeping assistance is not time limited, so the driver can misuse it as an autonomous driving function.	EV00 - Collision with other vehicle	The driver is misusing the function by taking both hands off the wheel and incorrectly treating the car as a fully autonomous vehicle. The vehicle could collide with a other vehicle or with road infrastructure.	Loss of of control (steering) because of misusing the system with possible collision.	E2 - Low probability	The driver is on a country road and misusing the system. That combination probably does not happen often, so we will label the exposure E2	S3 - Life-threatening or fatal injuries	The driver is traveling at high speed -> severity will be high.	C3 - Difficult to control or uncontrollable	The malfunction was that the lane keeping assistance was always on and had no time limit, so drivers could take both hands off the wheel. Because hands aren't on the wheel at high speeds, a vehicle accident would not be controllable.	ASIL B	The lane keeping assistance function shall be time limited and the additional steering torque shall end after a given time interval so that the driver cannot misuse the system for autonomous driving.
HA-003	OM03 - Normal driving	OS02- City Roads	EN01 - Normal Conditions	SD01 - Low speed	N / A	IU01 - Correctly used	**Normal driving** on **city roads** during **normal conditions** with **low speed** and **correctly used** system.	Lane Departure Warning (LDW) function shall apply an oscillating steering torque to provide the driver with haptic feedback.	DV02 - Function unexpectedly activated	The lane departure warning function is activated independently. The steering wheel begins to oscillate during normal city driving even if the driver expects the system to be deactivated.	EV00 - Collision with other vehicle	Unexpected haptic feedback can affect driver's ability to steer as intended. The driver could lose control of the vehicle and collide with another vehicle or with road infrastructure.	Loss of of control (steering) with possible collision.	E4 - High probability	The driver is driving on city roads under normal conditions at low speed and uses the system correctly. This situation will occur during almost every drive.	S1 - Light and moderate injuries	The driver is traveling at low speed at the city -> severity will be low.	C2 - Normally controllable	The malfunction was that the lane departure warning function causes the steering wheel to vibrate unexpectally, while the system should be off. The steering wheel will be oscillating with the normal torque. Most drivers would be able to control this situation.	ASIL A	The lane departure warning function shall not be activated independently if this is not intended by the driver.
HA-004	OM03 - Normal driving	OS05 - Mountain Pass	EN07 - Snow (slippery road)	SD01 - Low speed	N / A	IU01 - Correctly used	**Normal driving** on a **mountain pass** during **snow (slippery road)** with **low speed** and **correctly used** system.	Lane Keeping Assistance (LKA) function shall apply the steering torque when active in order to stay in ego lane.	DV19 - Sensor detection is wrong	The lane keeping assistance system is activated but the system can't detect the lane boundaries correctly because of snow. The systems interpret the lane boundaries wrong and tries to steer off the road.	EV04 - Car comes off the road	The driver trusts the system to get support to keep at the center of the lane. Instead of this the system does not detect the lane boundaries correct and adds extra steering torque to the wrong direction and forces the car to leave the road.	Leaving road because the system adds extra steering torque to the wrong direction while driving a curve on a mountain pass.	E2 - Low probability	The driver is on a mountain pass with lots of snow. That combination probably does not happen often, so we will label the exposure E2	S2 - Severe and life-threatening injuries	The driver drives at low speed on a mountain pass. If the car leaves the road, it could crash in the rocky, steep terrain. -> Severity will be medium.	C3 - Difficult to control or uncontrollable	The malfunction was that the lane keeping assistance system didn't detect the lane and road boundries correctly and forces the car to leave the road because of an add extra torque in the wrong direction. Most drivers would have difficulty controlling the vehicle.	ASIL A	The lane keeping assistance function shall deactivate itself and shall warn the driver if it is unable to reliably detect lane and road boundaries.